Table 3: Water quality criteria supportive of beneficial uses.

Designated Use	Primary Contact Recreation	Secondary Contact Recreation	Cold Water Biota	Salmonid Spawning
Coliforms and pH	500 FC/100mL	800 FC/100mL	pH between 6.5 and 9.5	pH between 6.5 and 9.5
Coliforms and dissolved gas	200 FC/100mL geometric mean over 30days	400 FC/100mL geometric mean over 30 days	dissolved gas not exceeding 110%	dissolved gas not exceeding 110%
chlorine			total chlorine residual less than 19 ug/L/hr or an average 11 ug/L/4 day period	total chlorine residual less than 19 ug/L/hr or an average 11 ug/L/4 day period
toxics substances			less than toxic substances set forth in 40 CFR 131.36(b)(1) Columns B1, B2, D2	less than toxic substances set forth in 40 CFR 131.36(b)(1) Columns B1, B2, D2
dissolved oxygen			exceeding 6 mg/L D.O.	exceeding 5 mg/L intergravel D. O.; exceeding 6 mg/L surface
temperature			less than 22°C (72°F) instantaneous; 19°C (66°F) daily average	less than 13°C (55°F) instantaneous; 9°C (48°F) daily average
ammonia			low ammonia (formula/tables for exact concentration	low ammonia (formula/tables for exact concentration
turbidity			less than 50 NTU greater than background instantaneous; 25 NTU over 10 days greater than background	

2.3. Water Quality Concerns and Status

The water quality concerns and status are addressed in the following sections by identifying potential pollutant sources and reviewing the existing data for the listed water bodies.

2.3.1. Pollutant Sources

The water bodies of the sub-basin placed on the 1996 list have reported pollutant exceedences for one or more of the following pollutants: bacteria, habitat alteration, nutrients, sediment, dissolved oxygen, oil and grease, pH and temperature. In most cases bacterial contamination would be predominantly from livestock grazing. Habitat alteration can occur from several actions. An incomplete list of these actions would include nearby road construction, removal of riparian vegetation, channelization or excess sedimentation. Excess nutrients normally are the result of human residential development or livestock grazing activities in the waters under assessment. Nutrients may also naturally build up in a lake over time causing a naturally eutrophic lake. Shallow lakes which have limited water flow through the lake on an annual basis are more likely to be

eutrophic. Any water body, which has its source in a eutrophic lake, will itself be rich in nutrients. Sediment is a water constituent naturally yielded from erosion of the watersheds to water bodies in question. Excess sedimentation in these watersheds most often has its origin in roads developed for logging or access to a watershed and bank erosion associated with grazing. Roads may yield sediment directly from their surfaces or bed through mass wasting or their locations may cause the adjacent stream to begin bank cutting or incising its bed. Dissolved oxygen may be deficient in lakes and some streams as the result of the presence of biological oxygen demanding materials. Often eutrophic lakes have sufficient algal and weed growth to engender dissolved oxygen problems. Streams may have insufficient dissolved oxygen as a result of temperature exceedences. Oxygen solubility declines with increased water temperature. Temperature exceedences in these waters are often due either to insufficient water flow, alteration of the stream structure to a broad shallow morphology or lack of riparian vegetation to supply shading (Platts, Megahan and Minshall., 1983). Streams which have their source in shallow warm lakes often are warm as well. Oil and grease can be yielded to the streams by major roads such as an Interstate. Oil may be yielded after rains to nearby streams. Oil and tar have been spilled during accidents on these roads and these materials can find their way into the nearby streams. Excessively low pH normally results from acid mine drainage or from mill tailings materials associated with mining. Although a few natural acid rock drainages can be found in the sub-basin, data indicates these do not alter the pH of streams, significantly.

2.3.2. Available Water Quality Data

The available data for the water bodies of the 1998 list are provided in the following sections.

2.3.2.1. Coeur d'Alene River

Water temperature and pH data have been collected on the Coeur d'Alene River as part of three years of metals monitoring. The pH data are from composite water samples collected monthly or bimonthly at the Cataldo, Rose Lake and Harrison monitoring stations (Table 4). The recorded pH values range between 6.5 and 7.5 and consistently have mean values above neutrality. These are typical pH values for the waters of northern Idaho. The data do not indicate any exceedence of the general aquatic pH standard (6.5-9.5)(IDAPA 16.01.02250.02.a.i.). Water temperature data were collected near the shore at the three monitoring stations as a part of the sampling procedure (Table 5). Water temperatures exceed cold water biota criteria in a very few cases during warm summers. Since these data were collected near shore, they are likely a few degrees warmer than water temperature offshore and at depth in the river. A few midsummer shore temperatures were in excess of the cold water biota standard (22°C)(IDAPA 16.01.02.250.c.ii.). Data developed by Golder and Associates (1998) support the data collected by DEQ, but none of these data were collected at depth in the river. In addition, sufficient data were not available to assess the daily average temperature cold water biota standard. To address this data gap, water temperature was continuously measured at the Harrison and Bull Run Bridges during the summer of 1999. The sensors were placed at four levels and three locations in the river at the Harrison Bridge and at two levels in the river at the Bull Run Bridge. The results from the eight sensors at the Harrison Bridge were remarkably similar. The

2.3.3 Beneficial Use Support Status

Water bodies were not assessed for habitat alteration. Current Division of Environmental Quality Policy does not recognize habitat alteration as a quantifiable and therefore allocatable parameter. Temperature standards are currently under review to assess their applicability. Water bodies requiring thermal TMDLs are being deferred until this review is complete. The assessed support status of the water bodies based on the data available is provided in column 4 of Table 16. The need for development of a TMDL is noted. Column five explains why TMDLs are not needed for some pollutants listed on the 1998 303(d) list.

Table 16: Results of Water body assessment based on application of the available data.

Water body Name	HUC Number	Boundaries	Assessed Support Status	Reasons TMDL not required for pollutants
Cd'A River	17010303 4021	SF Cd'A R to French Gulch	limited by sediment [1,3]	pH data provided Table 4
Cd'A River	17010303 4018	French Gulch to Skeel Gulch	limited by sediment [1,3]	pH data provided Table 4
Cd'A River	17010303 4022	Skeel Gulch to Latour Creek	limited by temperature	pH data provided Table 4 Sediment not impairing use
Cd'A River	17010303 4019	Latour Creek to Fourth of July Creek	limited by temperature	pH data provided Table 4 Sediment not impairing use
Cd'A River	17010303 4017	Fourth of July Creek to Fortier Creek	limited by temperature	pH data provided Table 4 Sediment not impairing use
Cd'A River	17010303 4016	Fortier Creek to Robinson Creek	limited by temperature	pH data provided Table 4 Sediment not impairing use
Cd'A River	17010303 4020	Robinson Creek to Cave Lake	limited by temperature	pH data provided Table 4 Sediment not impairing use
Cd'A River	17010303 4015	Cave Lake to Black Lake	limited by temperature	pH data provided Table 4 Sediment not impairing use
Cd'A River	17010303 3529	Black Lake to Thompson Lake	limited by temperature	pH data provided Table 4 Surface temperatures exceedences in Table 5 not expected at depth; HOBO data indicates standard exceedence ;. Sediment not impairing use
Cd'A River	17010303 4023	Thompson Lake to Cd'A Lake	limited by temperature	pH data provided Table 4 Sediment not impairing use
Latour Creek	17010303 3535	Headwaters to Cd'A River	impaired by temperature and sediment	bacteria below standard (section 3.2.2.2.)

Water body Name	HUC Number	Boundaries	Assessed Support Status	Reasons TMDL not required for pollutants
Baldy Creek	17010303 7535	Headwaters to Latour Creek	limited by temperature	bacteria below standard (section 3.2.2.2.) ;excessive sedimentation not found Table 15
Larch Creek	17010303 7536	Headwaters to Latour Creek	limited by temperature	bacteria below standard (section 3.2.2.2.) ; excessive sedimentation not found Table 15
Fourth of July Creek	17010303 3534	Headwaters to Cd'A River	not impaired	excessive sedimentation not found Table 15
Willow Creek	17010303 3531	Headwaters to Cd'A River	not impaired	excessive sedimentation not found Table 15
Black Lake	17010303 7529		not impaired	nutrients typical of eutrophic lake Table 6
Thompson Creek	17010303 3530	Headwaters to Cd'A River	not impaired	excessive sedimentation not found Table 15
Wolf Lodge Creek	17010303 3541	Headwaters to Cd'A Lake	impaired for sediment	bacteria and nutrients below standards (2.3.2.4.)
Marie Creek	17010303 7541	Searchlight Creek to Wolf Lodge Creek	TMDL not applicable [5]	habitat alteration not allocatable
Cedar Creek	17010303 3541	Headwaters to Wolf Lodge Creek	limited by sediment	oil and grease not found in stream
Fernan Lake	17010303		not impaired, but advisory TMDL recommended; year 2000	nutrients lower than weed growth guideline 25 ug/L Table 8
Fernan Creek	17010303 3543	Fernan Lake to Cd'A Lake	not impaired	stream re-stabilized after highway and golf course construction; bacteria and nutrients below standards (section 2.3.2.5.)
Cougar Creek	17010303 3545	NF Cougar Creek to Cd'A Lake	impaired by sediment	nutrients below guideline (section 2.3.2.6.)
Kid Creek	17010303 3546	Headwaters to Cd'A Lake	not impaired	nutrients below guideline (section 2.3.2.6.): excessive sedimentation not found Table 15
North Fork Mica Creek-Mica Creek	17010303 3547	Headwaters to Cd'A Lake	impaired by sediment and bacteria	Nutrients below guideline (section 2.3.2.7.)
Lake Creek	17010303 3549	House(Kruse?) Creek to Cd'A Lake	impaired by sediment	

1. Sedimentation must be addressed in South and North Fork Coeur d'Alene River TMDLs
2. Except for metals addressed in Coeur d'Alene River Metals TMDL.
3. Temperature likely limiting.
4. Sedimentation data incomplete. Treat as part of a Latour Creek TMDL.
5. Treat as part of a Wolf Lodge-Cedar Creeks TMDL.

The TMDLs required for HUC 17010303 can be grouped in some cases. The two most upstream segments of the Coeur d'Alene River are sediment impaired. This impairment is the result of sediment delivery from the North and South Forks of the river. Below Skeel Gulch sediments are fine and the river is at a sufficiently low gradient that the bed consists of fine sand rather than cobble bedded. In this case sedimentation does not impact beneficial use directly as in higher gradient channels. The sediment impairment above Skeel Gulch must be addressed in the source areas of the North and South Fork Coeur d'Alene Rivers.

Sediment and temperature impair Latour Creek. Its tributaries Baldy and Larch Creeks were found to be temperature impaired. Baldy and Larch Creeks will be treated in a Latour Creek TMDL which addresses excessive sedimentation. Temperature TMDLs have been postponed pending resolution of Idaho's temperature standards.

Wolf Lodge Creek and its tributary Cedar Creek appear from the sediment analysis to have elevated sedimentation. Although Marie Creek was not listed for sediment it will be treated in a Wolf Lodge Creek TMDL which also will address Cedar Creek. Individual sediment TMDLs will be required for Cougar, Kidd and Mica Creeks. A bacteria TMDL is required for Mica Creek.

A sediment TMDL is required for Lake Creek. The segment listed is located within the boundaries of the Coeur d'Alene Reservation making this TMDL the lead responsibility of the Environmental Protection Agency (EPA). Lake Creek had an active State Agricultural Water Quality Program (SAWQP). The program plan is with some rearrangement and the addition of an in-stream water quality goal, essentially a TMDL. A loading analysis and allocation are present in the current plan. Either the EPA or the Natural Resource Conservation Service could reshape the existing program plan into a TMDL. Implementation of that plan is currently underway.

2.4. Pollution Control

Some water pollution controls have been implemented. These are discussed in the following sections together with the pollution control strategies.

2.4.1. Control Efforts to Date

Pollution control efforts to date have been in place on some of the watershed requiring additional TMDL measures.

Analysis of sediment in eleven watersheds of the basin indicates roads are the primary sediment producing infrastructures. Forest harvest methods have progressed from logging systems heavily dependent on haul roads to those less dependent of high road densities. At certain log prices, helicopter logging has become a viable alternative in some watersheds. Unfortunately, an inventory of old roads continue to yield sediment to the streams. The U.S. Forest Service has